

★ TOFU U11 U14 94-161352/20 ★ JP06102540-A
Electrochromic element - has electrolyte filling film obtd. by filling
soln. of viologen cpd. in polyethylene oxide electrolyte in pores of
solid porous polymer thin film

TONEN CORP 92.02.29 92JP-044132

A85 L02 P81 (A25) (94.04.15) G02F 1/15, C09K 9/02

Element has an electrolyte thin film prepd. by filling a soln. contg. a
viologen deriv. dissolved in a polyethylene oxide type electrolyte, in
pores of a solid polymer porous thin film.

USE/ADVANTAGE - The element is suitable for several 10 cm
sq. area size. It has lower prodn. costs.

An electrochromic device was prepd. by lamination of a glass
substrate, an 0.1-10 micron thick opposing electrode (e.g. composite
C), a back plate (e.g. mixt. of alumina and a binder), a 4-20 microns
thick solid state electrolyte film (e.g. Li-tri-fluoro-methane-
sulphonate and a Viologen cpd. dissolved in polyethylene glycol
mono-ether, and impregnated into a porous polyethylene), an 0.1-0.2
micron thick ITO transparent electric conductive film and a glass
plate in order. (4pp Dwg.No.0/2)

N94-127001

U11-A15 U14-J01

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Scientific and Patent Information



(19)

(11) Publication number:

Generated Document.

PATENT ABSTRACTS OF JAPAN

(21) Application number: **04044132**(51) Intl. Cl.: **G02F 1/15 C09K 9/02**(22) Application date: **29.02.92**

(30) Priority: (43) Date of application publication: 15.04.94 (84) Designated contracting states:	(71) Applicant: TONEN CORP (72) Inventor: MIYATA KUMIKO KOSEKI KEIICHI SAKURADA SATOSH (74) Representative:
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(54) ELECTROCHROMIC ELEMENT

(57) Abstract:

PURPOSE: To provide the electrochromic element which can make multicolor display by packing a soln. prepd. by dissolving a biolagen deriv. into a polyethylene(PE) oxide electrolyte into the holes of a solid-state high-polymer porous thin film.

CONSTITUTION: The biolagen deriv. is dissolved into the PE oxide electrolyte of about 100 to 1000 mol.wt. to prepare the soln. and this soln. is packed into the pores of the solid-state high-polymer porous thin film. Polyolefin, polytetrafluoroethylene, etc., are usable as the solid-state high-polymer porous thin film. The polyolefins having $\geq 5 \times 10^5$ weight mol.wt. are more preferable for the ease of designing a porous structure and compatibly attaining thinner films and higher mechanical strength. The biolagen deriv. refers to 4,4'-bipyridine deriv. and is the oxidation reduction type compd., the oxidation type of which is colorless and the reduction type of which is blue to